

MULTIPLE CHANNEL JOINT DECODING AT MOBILE HANDSET

ABSTRACT OF THE DISCLOSURE

A system and method suppresses the interference caused by non-orthogonal signals on multiple channels of the same receiver by applying an inverse of the correlation among the non-orthogonal signals to the decoded signals. In a multi-channel receiver, the receiver is aware of the codes that are allocated to each of the channels, and thus, can be configured to determine the correlation among the multiple codes that are allocated to a receiver. The inverse of this correlation is applied to the output of the correlators assigned to each code, thereby suppressing the effects of using non-orthogonal codes for transmissions to the same receiver. If different sized codes are allocated to the same receiver, the correlation of the shorter code and a corresponding segment of the longer code is computed. The inverse of the correlation for the segment is applied to the output of the correlators, corresponding in time to the processing of the shorter code and this segment of the longer code. The correlation of the shorter code and each shorter-code-length segment of the longer code is similarly determined and its inverse applied to the outputs of the correlators. An output corresponding to the entire longer-length code is determined by combining the intermediate outputs corresponding to each shorter-code-length segment.